

# Double Beta Decay Working Group Summary

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DUSEL S4 Workshop  
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# Experiments

**“1 Ton Ge”**

**EXO**



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# Experiments

**“1 Ton Ge”**



**EXO**



# Experimental Location

## **Both Experiments:**

- $\geq 4800$  ft., but more study is required (S4)
- Deeper is better

# Facility Needs

## **Both Experiments:**

- Would fit in standard lab module; interest in “pit in the ground” as well
- Clean cranes in clean rooms
- Cleanest spaces are class 100 with local laminar flow benches
- Suggest epoxy-coated Pb shielding (EXO experience: EH&S, cleanliness, non-stick)

# Facility Needs

## **Both Experiments:**

- Common material selection / characterization
- Clean UG shop, storage (class 10000); shallow level is okay
- Rn mitigation
- Material transport UG in standard pressurized trailer
- Common etching / cleaning room near the experiments, with fume hoods for solvents and acids, DI water, large sonicators, waste disposal

# Schedule for Occupancy and for Deliverables

## **Both Experiments:**

- $\geq 4$  years from now
- Probably ready as soon as space is available

# Major Outstanding R&D Needs

## **1 Ton Ge**

- MAJORANA  
DEMONSTRATOR
- GERDA

## **EXO**

- EXO-200
- Ba tagging R&D
- GXe R&D

# Points of Contact

## **I Ton Ge**

- Spokesperson:  
Steve Elliott, LANL
- Engineer:  
Matthew Busch, TUNL

## **EXO**

- Spokesperson:  
Giorgio Gratta, SU
- Engineer:  
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